Claims

We claim:

1. A method for delivering a polynucleotide encoding a protein to a vertebrate cell, said method comprising introducing into said vertebrate cell a recombinant entomopox virus vector comprising said polynucleotide operably linked with a promoter sequence, thereby delivering and expressing said polynucleotide encoding said protein in said vertebrate cell.

2. The method according to claim 1, wherein said vertebrate cell is a mammalian cell.

3. The method according to claim 2, wherein said mammalian cell is a human cell.

4. The method according to claim 1, wherein said vector comprises inverted terminal repeat sequences flanking said polynucleotide encoding said protein.

5. The method according to claim 4, wherein said inverted terminal repeat sequences are derived from adeno-associated virus.

6. The method according to claim 1, wherein said promoter sequence is capable of driving expression of said polynucleotide encoding said protein.

7. The method according to claim 6, wherein said promoter sequence is selected from the group consisting of a CMV promoter sequence and herpes TK promoter sequence.

8. The method according to claim 1, wherein said protein encoded by said polynucleotide is selected from the group consisting of interleukins, cytokines, growth factors, interferons, enzymes, and structural proteins.

9. The method according to claim 1, wherein said vector is introduced into said vertebrate cell by infection in a viral particle.

10. The method according to claim 1, wherein said vector is introduced into said vertebrate cell by means selected from the group consisting of transfection, transduction, and injection.

11. The method according to claim 1, wherein said vector is introduced into said vertebrate cell *in vivo*.

12. The method according to claim 1, wherein said polynucleotide encoding said protein is greater than about 10 kb in size.

13. The method according to claim 1, wherein said polynucleotide also encodes a selectable marker protein.

14. A vertebrate cell comprising a recombinant entomopox virus vector comprising a polynucleotide encoding a protein operably linked with a heterologous promoter sequence.

15. The vertebrate cell according to claim 14; wherein said cell expresses said protein encoded by said polynucleotide.

16. A human cell comprising a recombinant entomopox virus vector comprising a polynucleotide encoding a protein operably linked with a non-poxvirus promoter sequence, wherein said non-poxvirus promoter sequence is activated by the cellular RNA polymerase of said human cell.